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PRESS RELEASE

WITTMANN BATTENFELD UK Ltd. at the Interplas in Birmingham

WITTMANN BATTENFELD with ultra-modern injection molding technology and automation at the Interplas in Birmingham

From September 26 to 28, 2023, WITTMANN BATTENFELD will present to visitors at the Interplas in Birmingham, hall 3A, booth No. CC10, state-of-the-art injection molding technology, automation and auxiliary equipment by way of fascinating applications.

As the leading plastics trade fair in Britain, the Interplas in Birmingham is also an important platform for the WITTMANN Group for introducing its latest technologies to the UK market jointly with its local subsidiary. Among other things, WITTMANN will demonstrate its expertise in the area of LSR processing and in processing alternative, bio-based materials.

A major focus of the machine presentation lies on the processing of special materials. On a SmartPower **120/350 LIM**, an optical lens for motor vehicle headlamps, known as SMARTlens, will be manufactured with a single-cavity mold supplied by the Austrian company Elmet, made of DOW Corning MS-5002, an injectable 2-component silicone, for Adaptive Driving Beam (ADB). This material was specially developed for highly transparent optical applications. The lens weighs just 10.38 grams. The mold comes with ventilation and overflow mechanisms for smooth production and maximum performance. What is more, SIGMASOFT mold flow technology is used for mold analysis, which enables a preliminary simulation, to shorten the design and sampling phase. In preparation, the simulation software has been used in designing the mold. The dosing pump, which also comes from Elmet, is a SMARTmix TOP 7000 pro, the latest model. With a footprint of only 1,150 x 790 mm, it features the lowest space requirements of all dosing systems suitable for 200 liter barrels currently on the market. This also reduces the quantity of LSR present inside the system, which, in turn, increases process reliability and reduces the rinsing volume.

In the second application, a bio building block made of Fasal is manufactured on an EcoPower 110/350 with the new B8X control system, using an 8-cavity mold supplied by Bioblo, Austria. This raw material is a compound made by Fasal Wood GmbH, Austria, from wood flour and post-industrial polypropylene supplied by Borealis, Austria. The equipment is designed as an Insider cell, which has a W918 robot and an S-Max 3 screenless granulator from WITTMANN, a conveyor belt and also the protective housing all integrated in the production system. The molded parts and the sprue are removed by the W918 robot, and the sprue is passed on directly to the granulator, where it is ground and then returned to the process. The finished parts are deposited on the integrated conveyor belt, transported to a flow wrapping machine and packaged.

To ensure top quality for the parts, the software packages HiQ Metering for active closing of the check valve and HiQ Melt for measuring the MFI are used in addition to HiQ Flow. The resulting MFR (melt flow rate) is an indicator of the material's flow attributes.

Automation

In the area of automation, WITTMANN BATTENFELD UK Ltd. will demonstrate the function of the **Sonic highspeed robot** by means of a chess game with a WITTMANN Sonic 143. The robot is equipped with a combined A/C servo axis and an L-shaped gripper fitted with two individual magnetic gripping systems to handle the chess pieces. The second one of these two grippers comes into play whenever a chess piece is to be captured, that is, replaced by another piece on a particular field. The chess pieces themselves were produced on a 3D printer and have a metal core, so that they can be moved by the metal grippers. The robot, the gripping systems and the chess software are all controlled by the latest WITTMANN R9 robot control system. Thanks to its open program interface, this system allows the integration of an open-source chess software. The Sonic 143 has the option of playing either against itself or against a challenger from among the trade fair visitors. At the WITTMANN BATTENFELD booth, all visitors are offered the opportunity to compete against the Sonic 143 in a lightning chess game with 3 min playing time, where they can enter their moves via a virtual chess board shown on the display of the WITTMANN R9 TeachBox.

The low energy consumption of the WITTMANN robot series will be demonstrated at the Interplas by an interactive showpiece known as the **ErgoRobot**. This application consists of a robot and a bike used as an ergometer. The trade fair visitor serves as the "power source". While riding the bike he sets the robot in motion. The robot used in this case is a Primus 14 in the standard version with an R8 control system, an appliance normally used for pick & place applications on machines with clamping

forces ranging from 50 to 150 t. The moving bike pedals drive via force transmission a servo motor mounted on the rear wheel. In the ErgoRobot application, this motor functions as the robot's power supply. The electricity generated by the motor is transmitted to the robot and sets it in motion.

To enable the Primus 14 to move at 100% of its top speed, the bike rider must generate about 150 watts of power. This is roughly the power required by an average refrigerator with freezer compartment to suit a four-person household. If more power is generated on the bike, the surplus is used to light two floor lamps placed next to it. The brightness of the lamps then depends on the amount of additional power supplied.



Fig. 1: SmartPower 120/350 LIM with Elmet mold and dosing pump



Fig. 2: SMARTlens – optical lens for motor vehicle headlamps



Fig. 3: EcoPower 110/350 B8X equipped as an Insider cell with an S-Max 3 screenless granulator



Fig. 4: Depositing of Bioblo building blocks on conveyor belt



Fig. 5: Chess board with WITTMANN highspeed robot Sonic 143



Fig. 6: ErgoRobot with WITTMANN robot Primus 14

The WITTMANN Group

The WITTMANN Group is a globally leading manufacturer of injection molding machines, robots and auxiliary equipment for processing a great variety of plasticizable materials – both plastic and non-plastic. The group of companies has its headquarters in Vienna, Austria and consists of two main divisions: WITTMANN BATTENFELD and WITTMANN. Following the principles of environmental protection, conservation of resources and circular economy, the WITTMANN Group engages in state-of-the-art process technology for maximum energy efficiency in injection molding, and in processing standard materials and materials with a high content of recyclates and renewable raw materials. The products of the WITTMANN Group are designed for horizontal and vertical integration into a Smart Factory and can be interlinked to form an intelligent production cell.

The companies of the group jointly operate ten production plants in six countries, and the additional sales companies at their 36 different locations are present in all major industrial markets around the world.

WITTMANN BATTENFELD pursues the continued strengthening of its market position as a manufacturer of injection molding machines and supplier of comprehensive modern machine technology in modular design. The product range of WITTMANN includes robots and automation systems, material handling systems, dryers, gravimetric and volumetric blenders, granulators, temperature controllers and chillers. The combination of the individual areas under the umbrella of the WITTMANN Group enables perfect integration – to the advantage of injection molding processors with an increasing demand for seamless interlocking of processing machines, automation and auxiliaries.

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